

**PRODUCTION FORECASTING AND ONLINE STOREFRONT REDESIGN FOR THE  
VIRGINIA INSTITUTE OF AUTISM (VIA)**

**ANALYSIS OF THE GROWTH OF TRAINING AND IMPROVEMENT OF  
EMPLOYMENT FOR PEOPLE WITH DISABILITIES IN THE UNITED STATES**

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On my honor as a University student, I have neither given nor received unauthorized aid  
on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

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## *Introduction*

Around 1.3 billion people experience a significant disability as of today (World Health Organization, 2023). People with these disabilities experience more limitations in everyday aspects than others. Our society is discriminating against the “nonemployed, working-age people with disabilities, [where] 80 percent said they would like a paid job now or in the future, which is comparable to the 78 percent of nondisabled, working-age people who are not employed” (Manas, 2008). Through anecdotal evidence, companies suggest they would like to employ people with disabilities, but they doubt their ability to keep individuals safe in the workplace (Kaletta, 2012). So, a case study was conducted by Walgreens, aiming to foster an inclusive workplace, and it involves selecting a specific percentage of employees with disabilities. During this opportunity, Walgreens focused on forging partnerships with social agencies to assist with screening and training candidates with disabilities, built a physical workspace that accommodated people with different disabilities, and created an accepting culture. This initiative created opportunities for these disabled people, and it was a very valuable investment. The productivity of disabled workers matched that of workers without disabilities and concluded disabled workers have a higher retention rate for a three-year period (Kaletta, 2012). It is essential to employ those with disabilities as there is a human right for everyone to work, and it is our duty as society to create a diverse and inclusive workforce. For these individuals with disabilities, employment improves quality of life, increased income and self-confidence, and expands a sense of community (Lindsay, 2018). For my research question, I am looking into how we can continue to grow and improve employment of people with disabilities in the United States. Specifically, I am investigating the systematic issues of

discrimination and lack of resources in the workplace as well as the physical assistive technology to employ more disabled workers.

In this prospectus, I will describe my technical project, “Production forecasting and online storefront redesign for the Virginia Institute of Autism” followed by my STS project, “Analysis of the growth of training and improvement of employment for people with disabilities in the United States”. Both of my projects are connected in the objective for the expansion of people with disabilities in the workforce. My technical project works specifically to grow a singular company in order to employ more disabled workers, while my STS project is the general advocacy and exploration of current and future disabled workers in society. My STS portion of the paper will discuss the growth and changes in employment of people with disabilities, as well as STS frameworks and methodologies that will be utilized to develop this topic. This main section will be followed by my key texts found in my research and why they are important for my objective.

### ***Technical Project: Enhancing the storefront of Virginia Institute of Autism***

In the United States, nearly 99% of young adults have worked at some point between the ages of 21 to 25 years old; however, only 58% of young adults with autism have ever worked during their early 20s (Roux et al., 2015). Not only is this percentage significantly lower than the national average, it is also the lowest rate of employment across all disabilities (Roux et al., 2015). My project is centered around addressing this issue through a partnership with VIAble Ventures, a local microbusiness run by the VIA Centers for Neurodevelopment. VIAble Ventures is a for-profit subsidiary that sells cosmetic products like candles and bath salts, all of which are made by artisans with autism. The program acts not only as a way to provide a steady source of

income for adults with neurological disorders, but also as a way to train them and give them the skills they need to enter the workforce.

My team has been tasked with helping the business meet its long-term goal of expanding employment opportunities to autistic adults in the local area by increasing online sales and revenue. Currently, VIAble Ventures is sustaining itself with profits from the local Charlottesville Farmers Markets that occur almost every Saturday during the fall. However, this sales method relies heavily on volunteer availability and seasonality. Therefore, this project is focusing on growing their online sales traffic via identifying sales trends and forecasting areas of improvement to the client. This will require a wide range of technical interventions, including looking at website analytics, analyzing historical sales data, developing a forecast based on past sales and seasonal demand, redesigning the website to improve usability, and devising creative ways to market VIAble Ventures' products.

This is a unique project in the sense that we will build on VIA's existing model to increase the number of autistic individuals they are able to employ, instead of designing and implementing a new employment program from scratch. By increasing sales in the current low months and simplifying user experience on the website, VIAble Ventures will be able to employ more people with autism to help them gain employment skills and earn paychecks. As we want to continue their direct goals of their company, we will continue turning "the unique skills, abilities, and interests of people with autism into fulfilling vocational opportunities" (VIAble Ventures, n.d.). Therefore, I would consider our work successful if online sales, especially in late winter / early spring, increase compared to last year.

***STS Project: Analysis of the improvement of employment for people with disabilities in the US***

### *Research Question*

My main research question is how do we continue to grow and improve employment for people with disabilities through technological developments? When examining employment of people with disabilities, the most prominent difficulty that arises is a discrimination surrounding their abilities in the workplace.

Autistic Self Advocacy Network has a self-advocated guide that works to have “Real Work For Real Pay” for all people with disabilities (Autistic Self Advocacy Network, n.d.). This looks at the systematic technology that is set into place within our community and life. This study promotes ideas that disabled people should be able to work if wanted, should be able to get the support they need to work, and they should get the same pay as non-disabled people do. A majority of this study discusses that there is “segregated employment” that makes people with disabilities work apart from non-disabled people. People in society believe that “disabled people who need a lot of support cannot work... so end up working in segregated places like sheltered workshops” (Autistic Self Advocacy Network, n.d.). These sheltered workshops only utilize disabled people to work, and these workers only complete the same tasks over and over again. These places utilize productivity tests, tests that look at how much a person can complete in an hour, which for a disabled person is unfair. This allows the workshops to pay a lot less than community workers, even less than minimum wage (Autistic Self Advocacy Network, n.d.). There is constant movement to limit sheltered work and improve employment outcomes in the labor market with more supported employment types of rehabilitation methods (Nevala, 2019). So, this case really pushed for integrated employment, as this will promote more learning skills, better communication, more money made, and an overall more productive atmosphere. We can solve a lot of these issues with systematic changes. Through the legal system, we can begin to

close sheltered workshops and allow these disabled people to work within the community instead. States can also change the way Medicaid is utilized and promote this money to help disabled people get jobs (Nevala, 2019). This study overall looked at the disparities of disabled people within the workforces and changes that need to be advocated for.

Through investigation, I have found a study that provides evidence that people with disabilities provide benefits for three essential elements of society: moral, legal, and economic. The study emphasizes the disadvantages people with disabilities have during employment due to employer prejudices, which can impact the individuals and companies negatively (Aichner, 2021). The legal situation differs between many countries, but is now becoming straightforward with a specific number or percentage of employees that have a disability. For larger companies with 35 to 50 employees, they attest that “7% of all employees must be disabled” (Aichner, 2021). This legal action will allow people with disabilities to prove their abilities if given the correct support system. Utilizing other studies, it states people with disabilities tend to have high motivation and job satisfaction, leading to better performance and increased loyalty. Also, it is shown that if people with disabilities are matched to suitable jobs they actually outperform their peers by contributing to higher company productivity, profitability, and efficiency. Also, with a number of examples from research and practice, employing people with disabilities involves minimal cost and helps create a positive work environment for all potential employees (Aichner, 2021). Looking at the company/employer side, hiring people with disabilities can enhance the company’s profitability, gain competitive advantage with increased customer loyalty and attract diverse customers, and create an inclusive work culture (Lindsay, 2018). There is high motivation for these individuals with disabilities to work yet employment rates are lower than

average. My thesis will work to find appropriate measures to employ more people with disabilities.

The general physical technologies I will examine are the specific tools and machinery utilized to help people with disabilities easily be implemented into the workforce, called assistive technology. I believe this will have changed significantly in the past decade and will definitely be an important aspect to my thesis development. All the newly implemented technology is politically inclusive through its use of different ranges of jobs. A generated computer screen technology, which reads the content of computer screens to users, is being utilized for those who are blind, have vision loss, or visual processing disorders like Dyslexia (Zielinski, 2016). There is an application that transcribes what is being spoken for those who are deaf or have hearing impairment. Another disability is related to motor skill impairments in which developers have created speech recognition software to enable those challenged with keyboards to still report information quickly. Exoskeletal arms are developed to support users' range of motion for jobs stretching from operation for assembly, laboratory tasks, or office work all for people with upper body limitations or dexterity issues (Zielinski, 2016). With these new technologies also comes the stigma surrounding disabilities. These individuals may face more social isolation through the utilization of these assistive technologies, as now there is more visual awareness of their disabilities.

It is important to look at the systematic and physical technologies that are positively and negatively impacting the integration of disabled people in the workplace.

### *Social Groups*

The relevant social groups in this research question are people who have disabilities. These people could be separated by looking at the different ranges and types of disabilities

within the group to better understand the different hardships and treatments received. Another social group is the employers in the community, as these are the people that will hire disabled people and set up the official support system they need. The major last social group would be the government, advocacy groups, and policy makers, as these groups decide the allocation of these resources and development of assistive technologies (Aicher, 2021). These groups can make funding decisions based on their beliefs. These key players are important as they can influence decisions based around the level of accessibility, safety, and functionality they want to reveal. It is political to decide who to distribute these technologies to and the spectrum of disabilities who are included in this development. Developing these systematic technologies involves choices about creating physical expensive technologies (Zielinski, 2016). The policies for implementation of these assistive technologies can reflect political decisions surrounding subsidies, insurance coverage, and public funding.

Another social group that is relevant, but I may leave out of my initial analysis, is the other non-disabled workers within the community, as they will be working directly with disabled people as there should be an integrated workplace. I think this group is important, but there is a very wide spread of views and behaviors within this social group that I don't want to consider before my prioritized social groups. My main social groups are the real people that can create direct change with the employment of disabled people.

### *Model/Framework*

In order to model my research, I will utilize the Actor-Network Theory (ANT). This theory is important as it demonstrates that human and nonhuman entities interact in an all inclusive network equally (Sismondo, 2010). So, people with disabilities are important actors within this system, but they are influenced by the employers, the technology that is readily



available for them, and the government/legal system that decides the resources that are provided in workplaces. The treatment of disabled workers is influenced by multiple sources also including coworkers, managers, HR, the office infrastructure, social views, and legislations. There are many actors that interact directly with each other, like how the assistive technology can enable or constrain a person with disabilities' ability to perform the work tasks. Another direct relationship is the specific organizational policies, legislation, that can support or limit the integration of disabled workers. In the ANT framework, the concept of translation involves actors negotiating and aligning their interests (Sismondo, 2010). In this context, disabled employees might have to negotiate for necessary accommodation, such as assistive technologies, by demonstrating their benefits to the company, such as enhanced productivity. This process is a key aspect of aligning individual needs with organizational goals within the framework. The production and distribution of these assistive technologies are also inherently political as they naturally have to go through economic policies, competition, and agreements throughout the market which are all external actors.

The Actor Network Theory works as “an ecological approach to the study of science and technology emphasizing that multiple and varying elements contribute to the success of an idea or artifact - and any element in an idea or artifact's environment may be responsible for failure” (Sismondo, 2010). In order to expand employment of people with disabilities, we have to create a successful network with all entities working in unison and for a common goal. If we can't provide the connections, the network may fail resulting in continued unawareness, biases, and discrimination against those with disabilities.

If we are trying to promote a more inclusive and representative population in our workplace, we can make these assistive technologies inherently good and readily available for more companies

throughout the United States. These technologies, if utilized, can prioritize inclusivity and accessibility in the workplace. The ANT study will provide a very holistic view of the specific complex factors that contribute to the employment of people with disabilities.

### *Timeline*

To further my exploration, I will continue to look at specific case studies of employment for people with disabilities, such as the ones I have previously mentioned.

### ***Foundation Texts and Primary Resources***

One of the most prominent texts I have found when researching is the case study presented by Walgreens that focused on creating a completely integrated workplace, with disabled and non-disabled people. This study has confirmed that the disabled workers have shown to be as efficient as the general workforce, and it also came at a smaller cost as expected, which is a general company concern (Kaletta, 2012). This specific case has been visited by more than 100 companies to study how to create this inclusive environment and how to institute this similar program into their own operations. This operation employed 37% of team members with disabilities with the remaining being non-disabled members (Kaletta, 2012). The simulation was looking at jobs that included case check-in, de-trash, and split-case pick. This study also proved that “state-of-the-art equipment was helpful but not necessary in creating an inclusive workforce”, while clear language, flexible training options, and safety implementation were the essential creators of improvements that benefited the entire workforce, not just those with disabilities (Kaletta, 2012). This study is very important as it helps show a direct example of the benefits for an integrated workforce.

Another important resource is from an article titled *Workforce Participation Barriers for People With Disability*. This study analyzed and identified the factors that influence the labor force participation of people with disabilities. The analytical process includes examining employment outcomes for people with disabilities versus non-disabled people, and it was determined that “less than a third of people in the labor force with employment restrictions received workplace accommodations from their employer” (Hogan, 2012). This study also suggests that there is a “negative relationship between the extent to which accommodations are required in the workplace, and the rate of disability employment” (Hogan, 2012). Another objective stated that workers themselves need to be informed of their rights in order to request for accommodations reasonably. So, these accommodations are “not only valuable for their role in improving employment participation rates... but also for their potential relationship with job satisfaction” (Hogan, 2012). This describes that even with the wide range of assistive technology and workplace accommodations available, the access to these resources are quite small. This study furthered the emphasis of disadvantages persisting with respect to employment participation and earnings for people with disabilities.

Another paper dives into the falsification of how disabilities are linked to difficulties in the workplace. This article sets out to examine the impact of employing those with disabilities. So, this piece looks into 2 sources of data to complete its argument. The first looked at a survey of income and program participants used for employment and earnings comparisons between those with disabilities and those without. The second looked at national household surveys looking at employment, political participation, life satisfaction etc. compared between individuals with disabilities and without. The results of the first data source concluded that “significantly less than half [46.3%] of the working age people with disabilities are employed in

the United States” (Schur, 2002, 342). Of the ones employed, they were more likely to work part time and have lower wages for hourly and annual earnings. But, this study shows employment for those with disabilities raises household income levels significantly more (49%) than those without disabilities (12%). The results of the second data source found that “employed people with disabilities were significantly less likely than those without disabilities to have given a presentation...participate in decision making” (Schur, 2002, 342). But, those individuals with disabilities that are employed are more likely to participate in political activities and have higher social integration and overall life satisfaction. This article highlights the importance of increasing employment opportunities for people with disabilities as it improves economic, social, and psychological outcomes. This information serves as good support and factual evidence to support my thesis. It is integral to validate my points of the benefits to increasing employment.

Finally, an important resource is the *Autistic Self Advocacy Network*. I specifically looked at an article surrounding the guide to employment policy of real work for real pay. This is created to advocate for the dismissal of sheltered workshops and the prioritization of an integrated workplace (Autistic Self Advocacy Network, n.d.). This advocacy group will further my general search into legislation issues for disabled workers and the continued efforts for more equality within the workforce.

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